UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,330	01/05/2001	J. Michael Weaver	0275D-000289	5073

7590 01/15/2003

Harness, Dickey & Pierce, P.L.C.
P.O. Box 828
Bloomfield Hills, MI 48303

EXAMINER
FLETCHER, MARLON T

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/755,330	WEAVER ET AL.	
	Examiner	Art Unit	
	Marlon T Fletcher	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) *14-39 and 50-55* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 40-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4-6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 47 is objected to because of the following informalities:

There is no punctuation (period) at the end of the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-13 and 40-49 are rejected under 35 U.S.C. 102(b) as being anticipated by von der Heide et al. (5,382,853).

As recited in claim 1, von der Heide et al. disclose a brushless DC motor, comprising; a rotor assembly including a rotatable shaft having a permanent magnet affixed to the shaft as discussed in column 3, lines 58-60 and column 4, lines 1-3; a plurality of coils (21-26) for producing a magnetic field for applying a torque to the rotor assembly, said coils including end turns that enclose the rotor assembly such that the rotor assembly is not removable; and a stator stack (10) made of a stator magnetic material for providing a magnetic flux return path.

As recited in claims 2-4, and 42-43, von der Heide et al. disclose the DC motor, further comprising a winding form being configured to receive the plurality of coils; wherein the winding form further includes a tube, a plurality of teeth as seen in figure 1.

As recited in claims 5, 6, 48, and 49, von der Heide et al. disclose the DC motor, wherein the coils are wound in a three phase winding configuration selected from the group of: delta configuration and wye configuration as discussed in column 7, lines 29-31.

As recited in claim 7, von der Heide et al. disclose the DC motor, wherein the coils are layer wound as seen in figure 1.

As recited in claims 8 and 12, von der Heide et al. disclose the DC motor, wherein the stator magnetic material is a laminated silicon steel as discussed in column 3, lines 18-19.

As recited in claims 9 and 13, von der Heide et al. disclose the DC motor, further comprising a position sensor system selected from the group comprised of: Hall effect sensors (42-44) and leakage flux sensors as discussed in column 4, lines 56-68.

As recited in claim 10, von der Heide et al. disclose the DC motor, wherein the permanent magnet is magnetized after the plurality of coils are wound as discussed in column 4, lines 1-20.

As recited in claim 11, von der Heide et al. disclose a brushless DC motor, comprising: a rotor assembly including a rotatable shaft and a permanent magnet affixed to the shaft, said permanent magnet for generating a magnetic field as discussed in column 3, lines 58-60 and column 4, lines 1-3; a winding form enclosing the rotor assembly as seen in figure 1; a plurality of coils (21-26) wound upon the winding form for producing a magnetic field for applying a torque to the rotor assembly, said coils including end turns that enclose the rotor assembly such that the rotor assembly is not removable, wherein said coils are connected in a three phase delta configuration having a positional relationship with the permanent magnet as discussed in column 7, lines 29-31; a stator stack (10) made of a stator magnetic material for providing a magnetic flux return path for the magnetic field of the permanent magnet; a position sensor system (42-44) for sensing the positional relationship that the coils have with the permanent magnet; and a controller (41, 45) coupled to the

position sensor for controlling the application of a power source to the coils in response to the positional relationship of the coils and the permanent magnet.

As recited in claim 40, von der Heide et al. disclose a brushless DC motor, comprising; a rotor assembly including a rotatable shaft having a permanent magnet affixed to the shaft as discussed in column 3, lines 58-60 and column 4, lines 1-3; an encapsulated stator (10) defining an interface with the rotor assembly such that an air gap (14) is formed; the stator comprising; a plurality of coils (21-26) for producing a magnetic field to apply a torque to the rotor assembly; and a stator stack (10) made of a stator magnetic material for providing a magnetic flux return path; and a seal applied to the interface being adapted to seal the air gap such that the air gap is blocked off as discussed in column 5, lines 38-52 and column 6, lines 7-19.

As recited in claim 41, von der Heide et al. disclose the DC motor, wherein the encapsulated stator further includes a winding form that encircles the rotor assembly such that an air gap is maintained between the winding form and the rotor assembly, the winding form being configured to receive the plurality of coils as seen in figures 1 and 2.

As recited in claims 44-47 von der Heide et al. disclose the DC motor, further comprising an end bell affixed to the stator being adapted to support the rotor assembly such that the air gap is maintained; wherein the seal is adapted to contact the 5 end plug and the end bell, thereby blocking off the air gap; wherein the seal is formed from a compliant material; wherein said coils include end turns that enclose the rotor assembly such that the rotor assembly is not removable as seen in figure 2.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are related to the present application, wherein all contain a brushless dc motor. The references are:

Garcia-Sinclair et al. (6,359,401)

Cheng (6,047,104)

Jones (4,873,463)

Schmider (4,755,699)

Petersen (4,745,345)

Langley et al. (4,547,713)

Arnold, Jr. et al. (4,228,384)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marlon T Fletcher whose telephone number is 703-308-0848. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Marlon T Fletcher
Primary Examiner
Art Unit 2837

MTF
January 11, 2003